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**FULL INSTRUCTIONS**

HOW TO MAKE AND USE.

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## THE SILENT INSTRUCTOR.

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### Black Walnut to Mahogany.

Fill a bottle little more than one-quarter full of red sanders (a red wood dust); then fill up the bottle with alcohol, shake occasionally and put away. Pour off what you want for present use, leaving the balance in the bottle. If it is too strong, dilute it with more alcohol; and if not strong enough, add more red sanders, strain the grounds through a bit of open rag before throwing the grounds away. This liquid will turn black walnut into mahogany as soon as it is rubbed on; and remember, whatever color it is while wet, the varnish will make it look that same color after it is varnished. This stain will improve all furniture in color, only do not use it strong enough to change its color more than to tinge it.

### Rosewood—Read this Carefully.

The simplest method to make rosewood on all light colored woods is: first, go over the wood with red sanders stain, then

with asphaltum varnish, comb it after applying the asphaltum varnish, so as the red will show through; then, if you want it first-class, go over it again with red sanders stain. The second coat of red sanders hides the asphaltum appearance and enriches the shades, and this will never fade; and red sanders stain will also improve walnut, rosewood, cedar, mahogany, &c., or, in fact, all dark furniture, by just tinging it, besides it brings out the grain and keeps the yellow shades of the varnish from smothering the grain, and, to my mind, it pays, for it enhances the value of the wood, especially on good furniture. It is indispensable on rosewood. You may try a little in your varnish on any old or new furniture, and you will be convinced. Of course, if you put it in the varnish, you must be careful to spread it evenly and not have it too strong the first coat; every coat will darken it. Asphaltum varnish and red sanders stain can be mixed. Turpentine will mix it to any shade, so that you may stain over painter's graining, and, if not too thick, the graining will be improved; and, by this means, even paneled doors that are dirty can be renewed. You must use judgment as to colors, by mixing the right quantities of red sanders stain, asphaltum varnish and turpentine—asphaltum to make it



dark, red sanders to make it red, and turpentine to thin the whole.

To Stain Light Woods to Mahogany,  
New Woods.

First, stain the wood to a black walnut with asphaltum varnish, then stain with red sanders stain; if the asphaltum varnish is too thick, dilute it with turpentine, or you can mix the two stains together.

Common Pine Furniture to Mahogany,  
New Furniture.

Make a sizing of whiting and venetian red, mixed with warm water, to the consistency of thick whitewash, put in as much thinly dissolved glue as will make the sizing stick to the wood, give the wood two coats, if it is knotty, and when dry rub with a cloth; then varnish with red sanders stain in the varnish; the sizing hides all flaws or defects in common pine wood.

Old Pine Furniture to Mahogany that has  
been Varnished.

First, give the furniture a coat of asphaltum varnish, make it dark enough to hide marks, scratches, or dirt, then varnish with red sanders stain in the varnish, or you can mix the two stains, which is best in most cases, then varnish.

## Black Walnut Furniture to Mahogany, Old Furniture.

The same as for old pine furniture, only make the asphaltum varnish lighter by adding turpentine to it, because the wood is darker than pine. Treat all old furniture the same. Turpentine thins asphaltum, and alcohol weakens red sanders stain.

ANOTHER MAHOGANY STAIN.—Dragon's blood used the same as red sanders, but it is too expensive and does not stand so well.

AGAIN.—By applying aquafortis diluted with water to dark new woods will make a mahogany.

### To Darken Mahogany.

Use sal soda or ley, but do not have it too strong; dilute it with water.

### Walnut Stain

Can be obtained with vinegar and brown umber, or Vandyke brown.

### Satin Wood Stain

Can be obtained with very light red sanders stains, on light woods. It must only be tinged.

### For Rosewood.

Dissolve two ounces pulverized extract of logwood in one pint of boiling water (better

let it boil till dissolved). Apply two coats to the wood while hot, and, to make the rosewood grain, stripe it according to fancy when dry with acetic acid, and when dry rub off all the black you can with a rough cloth before varnishing.

AGAIN.—A rosewood can be obtained on all light colored woods by staining with asphaltum varnish mixed with a little spirit varnish, then varnishing with varnish well stained with red sanders stain; but there will be no rosewood grain.

AGAIN.—Bright shades for ground (use cold): put one-fourth of an ounce of Camwood into one pint of alcohol; let it stand twenty-four hours, then add three drachms of extract of logwood and one drachm of aquafortis; apply one, two or three coats; and for striping grain, use iron filings in vinegar, after standing in a bottle a few hours; stripe with comb, brush or rag.

AGAIN.—Dark shade for ground: equal parts of logwood chips and redwood chips, boiled in just enough water to make a strong stain, apply while hot, one, two or three coats, directly after each other, and stripe with same as for bright ground; or if a rose pink to stripe with is desired, use one ounce

potash, one quart water, one ounce red sanders (extract color from red sanders, same as for mahogany stain), and mix together, then add half pound shellac, dissolve by a quick fire; use this upon logwood for imitation.

AGAIN.—By staining the wood as red as possible with red sanders, then stripe with asphaltum varnish; or burned brown umber, mixed with vinegar.

#### For Ebony,

Use the same as for rosewood, without stripping a grain; use a little dropblack in polish or varnish.

AGAIN.—A good black can be obtained with one and a half ounces gum shellac and one and a half ounces white pine gum, dissolved in alcohol; add three drachms dropblack, and put a little dropblack in the varnish.

#### Cherry Stain

Can be made on light woods with red sanders stain.

AGAIN.—Boil one ounce anotta in twelve ounces rain water; when the color is well extracted put in a bit of potash, the size of two peas, and keep it on the fire half hour or longer.

Imitation of Bird's Eye Maple on Pine,  
Beach or all Light Colored Woods.

Have a piece of iron that has a point to it; make it red hot; hold the hot point to the wood, and it will scorch or burn a spot; make as many eyes or spots as you desire, and varnish without any stain, and it will resemble the eye as in maple. Scorch the spots dark enough, but not too dark. Do not let the iron touch the wood.

Beautiful Shades on Light Colored Woods  
Can be made by holding a flat piece of red hot iron close to the wood, so as to scorch it irregularly.

AGAIN.—By making sand as hot as it can be made, and throwing it on the board in uneven thickness; this will bring out very beautiful shades.

To Make a Hickory Walking Stick or  
Fishing-Rod into Ebony.

First stain with red sanders stain, then run the stick through a fire or gas light till it is scorched black. Keep it moving so it will not get on fire, then polish or varnish with a little dropblack in varnish.

Mixing Oil with Shellac or Water Colors  
of any Shade.

When oil is used for varnish you can mix

it with shellac varnish so that colors will mix by adding pure turpentine. Turpentine will unite oil, shellac and alcohol, or water with any colors.

#### Dissolving Shellac or Rosin in Water as for Paint.

One pound of shellac, three pounds of rosin, one pound sal soda; boil slowly till dissolved. It may require more soda if shellac does not dissolve.

AGAIN.—Urine, or any alkalies, will dissolve shellac or rosin.

#### Blue Stain.

Use bright Prussian blue. This color must be mixed with white shellac or white varnish, as orange shellac has a yellow caste, and that would turn blue to a greenish shade.

#### Green Stain.

Use turmeric, saffron, or crome yellow, mixed with alcohol.

#### Orange Stain.

Use vermilion or carmine mixed with crome yellow, and be sure and have a good, full yellow, or it will look poor or watery.

#### Salmon Stain.

Dutch pink and red sanders stain.

**Flesh Color.**

Can be made by using different quantities of Dutch pink and red sanders stain.

**Purple Stain.**

Lake united with Prussian blue or carmine.

**Transparent.**

Oil of turpentine, four ounces ; oil of lavender, three ounces ; camphor, one-half drachm ; copal (ground), one ounce ; this will do also for tin.

**Scarlet.**

Use ground vermilion, but better cover this with rose pink or lake, as of itself it is too glaring.

**Crimson.**

Use sal flower or India lake dissolved in alcohol, which you will make your varnish of, by adding shellac, and varnish with this.

**To Brown Gun Barrels.**

Tincture of iodine, diluted with one-half its bulk of water. After cleaning the barrel bright, sponge it with the above, and let it stand forty-eight hours ; then rub well.

**Bright Yellow.**

Can be made on wood by putting a little aloes in the varnish.

### To Take Bruises Out of Furniture.

Thoroughly wet the bruises, then fold brown paper to several thicknesses, place it on the bruised part, iron it with a hot flat iron; repeat this till the bruise disappears. A hot poker will do for a small bruise.

### Removing Ink Spots from Wood.

Apply spirits salts till the ink disappears and immediately wash with water.

### French Polish.

Dissolve two ounces gum shellac in eight ounces of alcohol.

### Superior Polish.

Dissolve one and a half ounces gum shellac, one drachm sandarac and three drops of acetic acid in three ounces of alcohol.

### Instructions on Polishing.

Put a little of the polish on a bit of cotton wadding, then cover the wadding with a piece of soft cotton rag, and rub over the surface to be polished, observing the following rules:

1st. If the polish is too thick, it will not flow from the rubber or rag that you rub with on to the wood, but will shine the face of the rag instead of the wood; if too thick, ut more alcohol in the polish.



2d. If you make the polish too thin, it will not polish the wood or the rag, because there is not substance enough in the polish.

3d. Put just enough raw linseed oil on the wood with your finger to keep the rag from sticking; if too much oil is used the polish will not stand, and if too little, the polish will be dull and will stick to the rubber.

4th. When you first put fresh polish on the rubber or wadding, do not bear too hard when rubbing, or you will squeeze out too much polish, and the alcohol in the polish, will bite or dissolve that polish which is already on the wood, and it will rub off in spots, but as your rag gets dryer bear harder.

5th. Do not be in a hurry to get a shine; till you have had practice, rub slowly and rub in circles, not with the grain or straight, or the polish will be streaky.

6th. If the polish should rub off in spots through your applying it too fast, rub less on those spots till they harden, and better let all rest occasionally to harden; this is only till you get in the way of it. Beginners are so apt to rub too fast or put too much polish on at a time, and rub as though they were cleaning brass, and so rub the polish off as fast as they rub it. You rub

merely to spread the polish; it is not friction that causes it to shine.

7th. When there is sufficient body or polish on the wood, be sure and not leave it till every drop of the polish is rubbed out of the rag, and in order to get it all out, put a little alcohol on the rag—not too much at a time, or it will take the polish off—just enough to work out the polish that remains in the wadding; and this also takes off the oil that remains on the surface, which is right to do when finishing.

8th. Never leave off at any time with any polish in your rag; rub it dry always, or the polish will not stand.

9th. Begin first on a piece of board, say two feet square, till you get in the way of it.

10th. Learn to polish first without stain in the polish; have the surface smooth, and when you do use stain do not put too much in the polish, or you will get an uneven color. Remember, the longer you rub with stain in the polish the darker it will become.

11th. Take your time: more trouble is caused by being in a hurry than any other thing. Do not be discouraged; persevere with patience, and you will soon wonder why you ever had any trouble; and once learned, you never forget, and it will pay you.

N. B.—We call the wadding you rub with a rubber, simply because you rub with it.

## Remarks on Old Furniture.

1st. Varnish it with a brush.

2d. Before varnishing such as mahogany, black walnut, rosewood, or any dark woods, better mix a little turpentine with asphaltum and a little red sanders stain together; go over the work with this just dark enough to hide dirt spots or marks of any kind, and give one coat of this, then the work is ready for varnishing. If the colors do not go on evenly, it is because you use too much stain; better go over the work twice. All the stain will mix with the cheap varnish made with rosin as well as with other varnish; but mind while staining the wood with stain and varnish mixed, the varnish must be quite thin, or the color will not spread evenly.

3d. Red sanders stain always improves old mahogany, and will turn black walnut into mahogany, if strong enough. This stain is also good for rosewood, and really improves all old furniture, by having it strong or weak, as the case may require. You must judge of the shade you wish to make it, by adding more or less. Asphaltum varnish is a stain; and when using this stain, better go over the furniture with this first, then varnish. This stain will renew all old black walnut to its original colors, and even after using this stain, a little

red sanders stain in the varnish improves it. Buy your asphaltum varnish (unless you want much of it), as it is cheap, and can be made dark or light by using a little turpentine or benzine with it.

### Cement for Cracks in Wood.

Dissolve one part of glue in sixteen parts of water, and when almost cool stir in sawdust and prepared chalk, using the same kind of sawdust as the wood you wish to stop up the cracks, or stain the cement by mixing red sanders stain for mahogany, brown umber for black walnut, dropblack for ebony, or any stain that will resemble the wood.

### To Do Up an Old Sewing Machine.

1st. With benzine or naphtha wash off every particle of oil or grease from the machine, castings and wood work.

2d. Now varnish the castings (legs) with asphaltum varnish made to the right consistency with turpentine; this is cheap for the legs, but varnish the machine with either of the other black varnishes for iron, and when dry make your gilding designs according to fancy, with a mixture of gold bronze and thin shellac varnish (if you understand gilding with gold leaf all the better), and when dry, varnish with furniture varnish.

3d. For the cabinet work scrape out all dents, flaws, or marks of all kinds; then oil with raw linseed oil. A little red sanders stain in thin spirit varnish will make even black walnut appear fresher, but if you want to turn it to a mahogany use more red sanders stain; but for a perfect walnut rub over a stain of asphaltum varnish thinned with turpentine. Carved work as well as turned work can be varnished, the varnish stained to match the other parts.

### *How to Do Up Old Furniture.*

As this book will be placed in the hands of the inexperienced I can not give too much instruction; and if you will follow these instructions, little or no trouble will occur. There are many grades of furniture, and I will explain how to treat each grade separately:

**OLD CHAIRS**—Are the best for a young beginner to commence with, or anything that has not a large surface. 1st. If the chair be coated with grease, wash it off with soap and water. 2d. If the varnish has been scaled off, sand paper the chairs until the scales are even; I do not mean to remove all the varnish. 3d. Now mix asphaltum varnish and red sanders stain until it is just dark enough to hide all scratches, or as much

darker as you please. Then when dry varnish with any quality of furniture varnish; but cabinet makers mostly use (cheap varnish for furniture) turpentine and rosin varnish, since shellac and other varnishes are more expensive.

**WASH STANDS.**—The varnish generally washes off with the soap and water; give these a good washing, and when dry treat the same as the chairs, only in varnishing large surfaces, such as the top, you have to be more careful and not have the varnish too thick, or it will not flow smooth. Never varnish in a cold room.

**TABLES.**—All large surfaces that have a very smooth shine should be sand papered with the grain, placing the paper around a flat block of wood; this is done only when the varnish is rubbed or scratched off in places to make the surface level as possible; and also by sand papering off the fine glossy surface the stain will take more evenly. The same rule is for all furniture, but for pianos I would not recommend you to undertake, until you have dressed up all your other things, or had practice in flowing the varnish.

**OVER OLD PAINT.**—If the painting and graining is not scaled or worn off, just wash

the paint to remove all grease or loose dirt ; then, with red sanders stain alone, made strong or weak as may be desired, or asphaltum varnish and red sanders stain diluted with turpentine until it is not too thick to hide the graining, you can stain the paint to many different and handsome shades without damaging or hiding the graining, remembering asphaltum darkens, red sanders reddens and turpentine renders the whole lighter. Red sanders will turn any paint that has been done with asphaltum varnish to a rosewood shade if made strong enough; after staining, varnish ; and, after a little practice, you may unite these stains with the varnish and do all at the one time, varnish and stain.

Old Paint that is Scaled Off.—First thoroughly sand paper in order to level the scales then with a finer paper ; then, for rosewood, stain—first with strong red sanders, and then with asphaltum varnish, and before the asphaltum varnish hardens, if you can do graining, grain it ; but if not, comb it ; then, when thoroughly dry, go over it again with red sanders stain, made strong enough to remove the asphaltum appearance and cause it to resemble rich rosewood.

Coffins, new or damaged, may be treated

in the same way, and in fact most every thing; and if the gloss is rubbed off with fine sand paper so the stain will adhere to the surface, asphaltum varnish and red sanders can be made to quite a number of shades; and these stains will not fade and are much smoother, clearer and richer than venetian red, and retain their color better, and do not change.

Again, I must impress on the minds of young beginners to try on something else before you go ahead. At the same time remember not to act ridiculous by trying to have every dirty, old, rough piece of wood you may come across appear to your satisfaction. Common sense is required; and you must sand paper and render everything smooth before you stain or varnish it, or the stain will enter into the rough parts, such as saw cuts, &c.

### Remarks on Filling the Grain of Wood.

This calls forth arguments which are of no value, hence I will only make suggestions, as most men say they have something better than the other, I only fill cheap work myself before varnishing. I have done this by sprinkling linseed oil on the surface with my fingers then dusted whiting with umber, Venetian red, vandyke brown, crome yellow or



whatever coloring is nearest the wood and rub this well in. I sometimes use plaster paris, shellac or rosin. I think a good way is to first rub in whiting with any coloring matter to suit, then flow it over with rosin dissolved in turpentine and when dry rub down with a piece of cork covered with canvass and powdered pumice stone. But I do not have any pretensions of extra knowledge as to what to fill with, as I have not filled the grain only with varnish these many years because I always want my work to stand. Those who are not experienced will not make new furniture and the grain of the old furniture has already been filled when new.

#### *Oak for Painters.*

Sienna one pound, burnt umber one fourth pound, beeswax three ounces, boiled linseed oil one pint, turpentine half pint, Japan dryer four ounces; slice the beeswax, melt all together and when cold thin with equal parts of oil and turpentine. For English oak use more burnt sienna; this, of course hides the grain.

#### *Rudiments of Coloring and Shading.*

This may be of service to the new beginner.

TO IMITATE MAHOGANY.—Mix light red with burnt umber. Shadow with burnt umber.

ROSE WOOD.—Mix lake and lampblack, shadow with a strong tint of the same when wet.

SATIN WOOD.—Use yellow ochre, shadow with vandyke brown.

BRONZE.—Mix Prusian blue, gamboge and burnt umber, shadow with vandyke and indigo mixed.

BRASS.—Use gamboge, shadow with burnt terra de sienna and stipple with burnt umber. Inlaid brass or buhl ornaments may be laid on afterwards with a body color made of gamboge and whiting.

ORMOLA.—Mix king's yellow and Indian yellow.

VELVET.—Mix carmine and Indian red.

GREEN BAIZE.—Mix indigo and gamboge, for chair seats use vermilion.

GLASS.—Mix lampblack and indigo, shadow with the same.

PORPHYRA MARBLE.—Mix lake, venetian red, and ivory black, then speckle with constant white and with lampblack.

VERD ANTIQUE.—Mix indigo and Roman ochre, afterward lay on light and dark green spots.

**SIENNA MARBLE.**—Mix raw terra de sienna and burnt umber, vein it with burnt umber alone.

**MONA MARBLE.**—Mix indigo, Venetian red and lake vein with dark green.

**BLACK MARBLE**—Mix indigo and madder-brown with lampblack.

**WHITE DRAPERY.**—Shade with a mixture of Indian ink and indigo.

**BUFF COLORED DRAPERY.**—Mix gamboge and Roman ochre, or gamboge and a little lake. Shadow with the same darker; for the more intense shadows, mix gamboge and burnt umber.

**CHINTZ.**—Shade with a mixture of lake and gamboge.

**CRIMSON CURTAINS.**—Color with red lead and a little lake.

**GILT POLES.**—Color as for ormolu and shadow with burnt umber and gamboge combined, or with burnt umber and lake, and sometimes with a mixture of lake and gamboge.

Now, as landscapes are sometimes seen through the apertures of windows, when a view of the room is taken, we shall state what is considered to be the best and sim-

plest process: After the view is pencilled out, begin the sky; for this, use a mixture of Prussian blue and a little lake; begin at the top of the picture, and soften it downwards, but at the horizon add a little venetian red. The clouds are next to be worked in with a compound of venetian red and indigo and a little gamboge; next with the sky color and a little venetian red added, cover the whole of the ground, beginning at the front, and thinning it toward the horizon; but observe not to go over the rivers or pieces of water. Distant mountains are colored with indigo and Indian lake; near mountains with indigo, lake and burnt terra di sienna. Distant parts of the grass are made with indigo, yellow ocher and lake; near grass is made with burnt sienna, Italian pink and indigo. Dark touches on the foreground are of vandyke brown, indigo and burnt terra di sienna; intensely dark touches, of lampblack and burnt umber. Distant trees are worked with indigo, lake and gamboge, shaded with the same color, made darker; near trees are colored with burnt sienna, gamboge and indigo, deepened towards the shaded side.

This is all that is required to be known in the branch of shadowing, and is a complete and valueble, though concise, process for

painting and shading cabinet furniture landscapes, &c.

### Spirit Varnish.

Half pound gum shellac, half pound rosin, dissolved in one pint of good alcohol. To make this cheaper, use more rosin and less shellac.

WHITE SPIRIT VARNISH.—White shellac one pound, alcohol one pint. This is for varnishing over colors that must be kept clear, as orange shellac has a yellow caste, and would turn many delicate shades to a yellow tinge.

COPAL VARNISH.—Alcohol one pint, gum copal half an ounce, gum shellac one-quarter ounce. Reduce the gums to powder and dissolve them in the alcohol. Shake it often.

VARNISH FOR VIOLINS.—One pint of good alcohol, one and a half ounces of gum mastic, and one-third of a gill of turpentine varnish; while dissolving keep it in a warm place in a tin can; shake frequently; when dissolved, if too hard, add more turpentine.

SEED LAC VARNISH.—Dissolve three ounces of seed lac and three ounces of rosin in sufficiently good alcohol to dissolve it; thin this with alcohol when required.

**BLACK VARNISH FOR IRON OR METAL.**—Asphaltum three ounces, boiled oil four quarts, burnt umber eight ounces; dissolve by heat, and while cooling thin with turpentine.

Again: Amber twelve ounces, asphaltum two ounces; dissolve by heat; when dissolved, add boiled oil half pint, rosin two ounces, and while cooling add sixteen ounces of oil of turpentine.

**VERY CHEAP BLACK VARNISH FOR IRON.**—Asphaltum and turpentine dissolved by heat.

**WHITE VARNISH FOR WOOD, PAPER OR LINEN.**—Sandarac eight ounces, mastic two ounces, Canada balsam four ounces, alcohol one quart.

**GOOD WHITE HARD VARNISH.**—One quart good alcohol, ten ounces gum sandarac, two ounces gum mastic, half an ounce of gum anime; dissolve in a clean can or bottle by shaking often till dissolved, and strain.

**WHITE HARD VARNISH**—Dissolve gum anime in nut oil, boil it gently as the gum is added, giving it as much gum as the oil will take up, and while cooling dilute it with pure turpentine; this will do for the ground,

as also for the japanning for white; it takes some time to harden, but it is durable.

**CHEAP OIL VARNISH.**—Boil one pint of good linseed oil an hour, then add one-quarter pound of rosin, stir it well till dissolved, add one ounce spirits turpentine, strain and bottle for use; this varnish will stand hot water.

**VARNISH FOR PICTURES THAT WILL MAKE THE LIGHT REFLECT MORE UNIFORMLY**—Gum copal dissolved in linseed oil, rendered dry by adding quick lime, a little less than will decompose or boil the oil; this will do to varnish over any colors by adding a little turpentine; this makes a good preservative for pictures and renders the surface capable of reflecting the light more uniformly.

**CHEAP VARNISH FOR FURNITURE.**—Dissolve six pounds of rosin in one gallon of good turpentine, put the turpentine and rosin together into a vessel, then put the vessel into a pot of boiling water; this keeps it from danger of taking fire, and it will dissolve quicker by heat; stir it and it will soon dissolve. Cabinet Makers use this varnish, since shellac is so expensive.

**Varnish for Oil Paintings and Chromos.**

Alcohol half pint, dextine one pint, water

three pints; first prepare the picture by giving it two or three coats of thin starch or rice boiled in water, not too thick, strained through a cloth.

**TO MAKE ASPHALTUM VARNISH.**—Dissolve asphaltum gum in turpentine by heat. Benzine is often used in this to thin it before using.

#### Sealing Wax Varnish for Japanning.

Reduce the wax to a powder and put it into good alcohol, in a bottle; shake it often until dissolved. A two ounce stick will be enough for a quarter of a pint of alcohol. Much depends on the quality of the wax, and you can vary the color by using different colored wax.

#### *Mastic Varnish for Pictures, Drawings, Etc.*

To one pint spirits turpentine put twelve ounces of the cleanest gum mastic and shake it very often till dissolved, then strain and it is ready for use. If too thick thin with turpentine.

#### *Varnish for Drawings or any kind of Paper or Card Work.*

Boil clear parchment cuttings in water in a clean glazed pipkin till they produce a clean size. Give two coats, and pass the



brush over delicate colors quick so as not to disturb the delicacy.

*Varnish for Drawings, Paper or Card Work.*

Dissolve one ounce of best isinglass in about one pint of water and simmer it over the fire, then strain through a muslin and keep for use. Try the size on a piece of paper moderately warm; if it glistens it is too thick, add more water; if it soaks into the paper it is too thin, add or diminish the isinglass till it merely dulls the surface, then give your drawing two or three coats letting it dry between each, be careful (particularly in first coat) to bear very lightly on the brush, which should be flat and of Camel's hair. Then take your mastic varnish and give it at least three coats and it will answer your most sanguine wishes. Nothing will equal this if well done.

**Amber Varnish.**—To eight pounds of amber in powder add two of gum lac, melt the amber in a glazed pipkin with half a pint of best spirits of turpentine, and when melted add the gum lac; place it again on the fire and continue stirring it with a bit of stick till dissolved, then add an ounce of the best cold drawn linseed oil; stir well and strain.

**Colorless Copal Varnish.**—As all copal is not fit for the purpose, to ascertain such

pieces as are fit, a single drop of pure essence of rosemary must be let drop on each piece, and those pieces that soften when the rosemary drops are good. Reduce these to powder and sift through a fine sieve, then place them in a pan and not have the gum more than half an inch thick at the bottom, then just cover it with oil rosemary; stir this a few minutes when the copal will dissolve into a viscous fluid. Let it stand for two hours, then pour in it two or three drops of very pure alcohol, which distributes over the oily mass by clinging to the bottle in different directions with a very gentle motion; repeat this operation by little and little till the incorporation is effected and the varnish brought to a proper degree of fluidity, then let it stand a few days and when clear bottle it for use; this is made without heat. This varnish will do for pasteboard, wood, metals and paintings and is a very superior varnish.

**Turpentine Copal Varnish.**—To two ounces gum copal add eight ounces best oil turpentine; put the turpentine into a vessel, then the vessel into boiling water; when the turpentine is very hot very gradually add the gum copal and stir, adding fresh gum as fast as it will dissolve; let it settle for a few days and strain. In making the varnish it

frequently happens that the gum will not melt as readily as it ought, owing to the turpentine not being sufficiently rectified. When the turpentine is good it will always succeed.

Remarks on Varnishes.—Never let any gums remain any length of time without shaking or stirring or you will have trouble to get them dissolved as they will settle at the bottom into a cake. When you dissolve gums or rosin in turpentine (to save all danger from fire) put the turpentine and gums or rosin together into a vessel, then place this vessel into another larger vessel of hot water, and you may boil the water while you stir the material till it is dissolved; by this method your turpentine is made hot and your gums or rosin dissolved quicker. If the varnishes are too thick add more of the same kind of liquid with which the varnish is made; if too thin, more of the gums or rosin as directed in the making of each kind of varnish. If the varnish leaves brush marks it is too thick: if it does not leave a shining body it is too thin. Place the varnish in a warm place and it will work better with the cold chill off of it. Don't stroke your varnish too often in one place, but flow it on: practice on such as chairs or anything that has not a large flat surface till you get in the way. Some try to use a

rag with varnish who know no better; when you use varnish use a brush and when you use polish then use a rag as directed. Remember as I have told you, polishing requires practice, but to varnish old furniture is soon attainable, as the grain of the wood has been filled when new by the cabinet maker.

### Method of Applying Bronze.

Go over the parts you intend to bronze with gold size or varnish and when it is sufficiently dry or when it does not adhere to the finger, but feels clammy, dip a piece of cotton rolled into a hard ball into the bronze and rub on the place to be bronzed.

### To Make Gold Bronze Powder.

Put a quantity of gold leaf into a stone mortar together with a small portion of honey and a little water; grind them well together till the gold seems dispersed through the whole paste, add by degrees more water till it is quite thin, keeping it constantly stirred, then let it settle and gently pour off the water as near as you can without wasting the gold; repeat the washing till you see the gold in the form of powder at the bottom, then pour the water clean off and turn the gold out on a piece of blotting paper, keep it from the dust and when dry keep it

in a bottle for use. This is very expensive and used only for very particular work.

#### Imitation Gold Bronze Powder.

A very good substitute can be made by treating Dutch metal in the same manner as the gold leaf but you must keep it closely stopped or it will tarnish.

#### Silver Bronze Powder

Can be made with silver leaf treated in the same manner as gold leaf, but this must be well stopped and with paper wrapped around it, as it is apt to change color as Dutch metal.

#### Copper or Brass Bronze Powder.

Put very fine filings of copper into an iron mortar and beat them thoroughly, but instead of using honey, pound it dry with a portion of salamoniac then wash it as the above. Keep this also from the air. Brass filings may be treated in the same manner.

#### Tin Bronze Powder.

Melt grain tin over a fire in a ladle when in a fluid state; add by degrees quicksilver and stir it well. It will be transferred into a greyish powder which for the sake of variety you may use with others or alone.

## Remarks on Mixing Bronze Powders.

By mixing different bronzes together you may produce a great variety that will add much to the beauty of the work. There is a variety of colors in gold leaf, all of which will produce a different color bronze, but we have set down those that are generally used.

### To Bronze Brass Figures or Ornaments.

After having lackered your brass work, in those places you wish to look like gold take for those parts as are intended to appear as bronze, of umber (burnt or not burnt), according to the color you wish, and grind it with a small quantity of alcohol, do the same with verditer, and also spruce ocre. Keep these colors separate for use, and when wanted, take some pale gold lacker and mix with it a portion of these ingrediencies till you get the color desired. Then apply the mixture in the same manner as directed in lackering brass work. You may also mix with it any colored bronze powder for the sake of variety, and a little experience will enable you to imitate any bronze or color you please.

### To Bronze any Figures.

After the figure has been sized and rubbed down, take Prussian blue, verditer, and

spruce ochre, grind them separately in water, turpentine or oil, according to the work, mix them together in such proportions as will produce the color desired. Then grind dutch mictal (commonly called bronze), in the same material you grind your color, lay this on the prominent parts of the figure, and if done with care it will produce a grand effect. There are several different colored bronzes, which can be purchased at the color shops if you do not wish to make them, and it is cheaper to purchase if you only want it in small quantities.

#### To Bronze Wood.

Having stained the parts to be bronzed black, take japaner's gold size and mix with a small portion of Roman ochre and Prussian blue, go over the black part lightly, then let it dry till it feels just sticky to the fingers, but not come off, then with a hard ball of cotton dipped in any of the bronze powders and rub those places, and if you think proper give it a thin coat of japaner's gold size, then with spirits of turpentine. You may alter the color of your bronze by mixing either more or less blue as also other colors, or verditer green by itself, but do not put your colors on thick over the black stain, but rather glaze it on, as it is not wanted in a

body, but should be rather transparent, as this will make it more of a metallic appearance.

#### Pale Gold Lacker.

Dissolve in a quart of good alcohol as much gamboge as will give a high yellow, then add three ounces of seed lack (well powdered and sifted), shake often and dissolve.

#### To Lacker with Turpentine.

Take seed lack, two ounces; sandarac or mastic, two ounces, dragon's blood, (pounded), quarter of an ounce; gumgutta, twenty grains; clear turpentine, one ounce; and the best spirits turpentine, sixteen ounces. This lacker is not equal to that made with alcohol. It does not dry so quick, nor is it so durable. All colors that will give out their coloring with alcohol can be used in lacker-ing and can be mixed with the compositions used for the bodies of all lackers, such as seed lac, shellac, etc.

#### To Clean Old Brass for Lackering.

Make a strong ley of wood ashes, which may be strengthened with soap, put in your brass and the lacker will soon come off. Then have ready a mixture of aquafortis and water, sufficiently strong to take off the



dirt, wash it afterward in clean water and it is ready for lackering.

### How to Lacker Brass.

If the brass is old, clean it as in the directions, but if it is new free it from dust and rub it with a piece of wash leather, make it bright as possible, put your work on a hot plate or before a fire as a substitute till it is moderately heated, not too hot or it will blister the lacker, then, according to the color you want, take the following preparations and make it warm, lay hold of your work with a pair of pliers, and with a soft brush apply the lacker; be careful not to rub it on, but stroke it one way and place it again to the fire, but do not let it remain too long, only till the varnish is hard. Perhaps it is better not to give it the second heat till you gain experience. If it is not covered go over the work again and it will look like new.

### Gold Lacker.

One and one-half ounces gum turmeric, one and one-half drachms gamboge, five and one-quarter ounces gum sandarac, one and one-quarter ounces shellac, one quart of good alcohol. When thoroughly dissolved, strain and add one ounce turpentine well mixed.

AGAIN—(Deep Gold Lacker).—Seed lack three ounces, turmeric one ounce, dragon's blood ground) one-fourth ounce, alcohol one pint; shake occasionally, and in one week strain through a piece of silk.

#### Gold Lacker for Brass.

Alcohol, half pint; half pound of seed lack, picked clean and clear of all pieces (the beauty of the lacker depends on this), put the seed lack into the alcohol, shake it very often and keep it in a warm place till dissolved, and it is ready for use.

#### Superior Lacker for Brass.

Seed lack, three ounces; amber or copal (thoroughly ground), one ounce; dragon's blood, thirty-five grains (well bruised); oriental saffron, eighteen grains; very pure alcohol, twenty ounces. To apply this lacker to ornaments or brass, expose them to heat and dip them into the lacker. Two or three coatings may be applied in this manner if necessary. This lacker is durable and of a beautiful color. Articles done in this manner can be cleaned with water, then with a rag.

*To Gild Metal by Dissolving Gold in Aqua Regia.*

Dissolve gold in aqua regia, and into the

solution dip linen rags, take them out and dry them gently, then burn them to tinder; after you have thoroughly polished your work. Then take a cork and, dipping it into common salt and afterward into the tinder, rub your work well, and its surface will be gilt. Aqua regia is compounded of two parts of nitric acid (aquafortis) and one part muriatic acid (spirits of salts) mixed.

Superior English Dryers can not be beat for Paints or Varnishes.—Linseed oil one gallon; put into the oil three quarters of a pound of gum shellac, half pound litharge, half pound burnt turkey umber, half pound red lead, and six ounces of sugar of lead. Boil the oil until all is dissolved, which occurs in about four hours; then remove from the fire and when it is cooled a little add one gallon of spirits of turpentine and it is ready for use. Remember to keep all well stirred. Cabinet makers and painters will find this indispensable.

English Lacker for Drying Paint.—To one and a half gallons of linseed oil add two pounds of litharge, one and a half pounds of red lead, half a pound of umber; boil for five hours. To ascertain when this is ready: drop a portion of it on a piece of glass and cool it in water, and if it gets

hard so that it can not be rubbed off with the thumb it will do ; and when it becomes moderately warm, put into it one and a half gallons of spirits of turpentine first, then try it on a piece of glass sideways, and if it does not run, add more turpentine until it does. This is far superior to the American Eastern lacker for drying paint.

English Boiled Oil.—To one gallon of linseed oil add one-fourth pound red lead, one-fourth pound litharge, half pound rosin, one-fourth pound umber, and just before it comes to a boil put in one-fourth pound sugar of lead and boil for four hours. When this is ready it will scorch a feather. Be careful, when adding sugar of lead, it does not boil over. Always, in making varnishes or any mixtures by heat, have a large vessel. The above will pay well. Give it a trial, and carriage manufacturers need not be troubled with cracked varnished, if this oil is used.

American Boiled Oil.—To one gallon of linseed oil add eight ounces rosin, twelve ounces litharge, three ounces sulphurate of zinc ; boil three hours.

To Dissolve Shellac.—Painters can dissolve shellac with borax and ammonia.

Gold Size.—Grind fine salimoniac with

a muller and stone; scrape into it a little beef suit, and grind all thoroughly together, after which mix in, with a pallet knife, a small proportion of parchment size with a double proportion of water.

Another Gold Size.—Grind a lump of tobacco pipe clay into a very stiff paste with thin size; add a small quantity of ruddle and fine black lead ground very fine, and temper the whole with a little piece of tallow.

A Varnish which will Suit all Sorts of Prints, Pictures, Maps, Cuts. Bears washing and is as Shiny as Glass.—Mix one quarter of a pound of venice turpentine with a gill of alcohol; if too thick, more alcohol; if too thin, more venice turpentine so as to bring it to the consistency of milk. Lay one coat of this on the face of the print and when it is dry it will shine like glass. If it is not to your liking give it another coat.

To Make Appear in Gold the Figures of a Print.—After having given on both sides of the print one coat of the above varnish in order to make it transparent, let it dry a little while, till it is just sticky, then lay some gold in leaves on the back side of the print pressing it on gently with the cloth you hold in your hand. By this means all

places whereon you shall lay the leaves will appear like true massive gold on the right side; when this is all thoroughly dry, lay on the right side of it one coat of varnish (same as before), and it will be then as good as any crown glass. You may also put a pasteboard behind the print to support it better in the frame.

How to Improve the Quality of Turpentine for Particular purposes.—Expose the turpentine in a can or bottle to the heat of the sun and the watery particles will be gradually dissipated; the bottle or can should not be corked quite tight.

To Solder or Weld Tortoise Shell or Horn.—Provide yourself with a pair of pincers or tongs so constructed that you can reach four inches beyond the rivet; then file the tortoise shell carefully to a lap joint; observe that there is no grease about it; wet the joint with water, apply the pincers following them with water and the shell will join as if it were one piece.

To Polish Brass Inlaid in Wood.

If the brass is very dull file it with a small, fine file or sandpaper, then rub well with Tripoli and a piece of felt dipped in raw linseed oil.

### To Beautify or Crystalize Glass.

Spread on a plate of glass a few drops of nitrate of silver previously distilled with double the quantity of rain water; place at the bottom of it flat upon the glass and in connection with the fluid a piece of copper or zinc wire bent to any shape, and set the whole in a horizontal position undisturbed and in a few hours a brilliant crystalization of metallic silver will appear around the wire upon the glass and the arrangement of crystal will extend gradually till the whole of the fluid acts upon the wire.

### Cement for Turners.

Melt together beeswax one ounce, rosin half an ounce and pitch half an ounce, stir into this some fine brick dust to give it a body, if too soft add more rosin and if too hard, more wax; when cold make it up in cakes for use. This will be found very useful to fasten pieces of wood on the chuck which is done by applying your roll of cement to the chuck and it will adhere with sufficient force.

### Cement for Broken Glass.

Steep one ounce of isinglass in half pint of alcohol for twenty-four hours, then let it dissolve over a slow fire (keep it corked),

now well bruise six cloves of garlic in a mortar, put them in a linen cloth and squeeze the juice into the isinglass, mix all well together and bottle for use. This is excellent to join ornaments.

### Cement for China that will Stand Fire or Water.

Beat the white of eggs well to a froth, let them settle, add soft grated cheese and quicklime (enough of each to make it into a soft paste), heat them well together and apply a little to the broken edges which must be free from grease or dirt.

### *Stick Cement for Glass or China.*

Pound half an ounce of rosin and four ounces of gum mastic, put them into a pipkin on the fire to melt, stir them well, to this add about half an ounce of finely powdered glass and half an ounce of quicklime; stir the whole well together and when nearly cold form it into sticks by rolling it on a stone as stick sealing wax, only smaller, heat the broken edges sufficient to melt the cement, rub thinly the edges and press well till cool. If this be carefully done it will sooner break anywhere else, so don't blame the cement; but yourself.



### To Silver Glass Globes.

Take four ounces of quicksilver to which put as much tinfoil as to become barely fluid when mixed, have the globe clean and warm pour in the mixture and turn the globe 'round till the silver has touched all over, then pour the remainder out.

### Ornamental Japanning for Workboxes, Etc., Etc.,

So that the figures appear the color of the wood. The following method is good and very little known and very correct. The following preparation is necessary, and may be termed the stoping out mixture. Dissolve the best white beeswax in spirits of turpentine till it is to the consistency of varnish, keep this in a bottle for use, now mix for present use as much as is necessary with white lead (in powder), or flake white to give it a body, but not too thick, only so that it will flow from your pencil. Having traced your design, go over the parts which you wish to remain of the color of the wood, and let it dry, then mix black lead (in fine powder), with parchment or isinglass size and go evenly and smoothly over every part of the work, it will now appear wholly black or of whatever color you have mixed with the size. Let the whole get thoroughly dry, then with a stiff

brush dipped in plain spirits of turpentine, rub the whole of the work well and those parts that have been gone over with the stoping out mixture will come off, leaving the black or the colors perfect. It will then appear as if you had pricked in your work, but much more sharp and will have a beautiful effect, and nothing is to be done but varnished. To finish your work in the manner of Indian Japan, you must not be sparing with your varnish.

#### To Polish Brass Inlaid in Wood.

The brass must be filed very even with the wood and smoothed with a very fine file, then having mixed some Tripoli powder with raw linseed oil, with a rubber of felt or old hat polish the work by well rubbing until the desired effect is produced. If the work be ebony or dark rosewood, take some very finely powdered charcoal and apply it dry, after you have finished with the tripoli. This will increase the beauty of the polish.

#### To Polish Ivory.

If ivory be polished with putty powder and water, by rubbing it with a piece of felt or old hat it will in a short time produce a fine gloss.

#### To Polish the work of Pearl.

Rub the work with finely powdered

pomice stone (first washed to separate the dirt), with which you may polish it very smooth; then apply putty powder as for ivory. This will produce a fine polish and a good color.

#### To Polish Marble.

If the marble be scratched, have a piece of sandstone with a fine grit, rub the face of the marble backward and forward, using very fine sand and water till the marble appears equally rough and not in scratches. Next use a finer stone and finer sand till the face appears equally gone over; then with fine emory powder and a piece of felt or old hat wrapped around a weight, rub it till all the marks left by the powder process are worked out, and it will appear with a comparative gloss on the surface. Afterward, finish the polish with putty powder and a fine clean rag. As soon as the face presents a fine gloss, do not put any more powder on the rag, but rub it well, and in a short time it will appear as when fresh out of the mason's hands.

#### *To Make Transparent Tracing Paper.*

Dissolve a piece of white wax about the size of a walnut in a half pint of spirits of turpentine; procure very fine white woven tissue paper; lay it on a clean board, and,

with a soft brush dipped in this liquid, go over one side, and then turn it over and apply it to the other side; hang it up in a clean place to dry, free from dirt. It will be ready for use in a few days. You may use a little rosin, or you may use rosin altogether instead of wax.

### **Body Varnish for Coach Makers.**

Eight pounds of fine gum anime, two gallons of clarified oil, three gallons of good turpentine, boil slowly for four hours; drop-black mixed makes the best black.

### **Mahogany Colored Cement.**

Melt two ounces beeswax and half an ounce of rosin together then add half an ounce of Indian red and a small quantity of yellow ochre. Keep this in a pipkin for use.

### **Portable Glue for Mending Paper, Notes, Etc., Etc.**

Boil one pound of best glue, strain it very clean, boil also four ounces of isinglass, put it into a double gluepot with half a pound of fine brown sugar and boil it pretty thick, then either pour it into moulds or into plates, and when cold, you may cut it into squares for the pocket. This glue can be immediately diluted in warm water, therefore it is very useful for draughtsmen and archi-

fects, and by moistening it in the mouth, you can rub the edges of bank notes or paper of any kind and mend them. It also does for sealing envelopes. Better wrap the square of glue in a bit of tinfoil for the pocket and damp one end. If the edges of notes are placed neatly together you can not detect that they have been torn.

#### Strong Glue for Veneering.

Get the best glue of rather a light color, free from cloud and streaks, dissolve this in water and to every pint add half a gill of best vinegar and half an ounce of isinglass.

#### Glue for Inlaying Brass or Silver.

Melt your glue as usual and to every pint add of finely powdered rosin and finely powdered brick dust of each, two spoonfulls, well corporate together and it will hold the metal much faster than fine glue.

#### Glue that Never Separates.

One pound of good glue, one half ounce of whiting, one fourth ounce of powder white lead, dissolve glue in water as usual, then add the whiting and when well mixed put in the lead and well stir, used warm.

#### Glue that will Resist Moisture.

Dissolve gum mastic and sandarac of each

a quarter ounce in a quarter pint of good alcohol, to which add a quarter ounce of clear turpentine, now take strong glue ready dissolved, put the gum into a double gluepot, and add by degrees the glue, constantly stirring it over the fire till the whole is well incorporated, strain it through a cloth and it is ready for use, return it to the gluepot and add half an ounce of very finely powdered glass, use it quite warm.

#### Another Glue for Standing Water.

To two quarts of skim milk add half pound of best glue, melt them together, mind it don't boil over, and you have a very strong glue which will resist damp or moisture.

#### To Raise Blistered Veneer.

First wash the surface with boiling water and with a coarse cloth remove all dirt or grease, then place it before the fire or heat it with a piece of hot iron, oil the surface with pure raw linseed oil, heat it again, the heat will cause the oil to penetrate quite through the veneer and soften the glue underneath and while hot raise the edge with a chissel carefully. Again, if it should get cold, apply more oil and heat, repeat till it is entirely separated then wash off the old glue and relay as new veneer.

### Imitation of Inlaying of Silver.

Take any quantity of the purest and best grain tin, melt it in a ladle, add to it while in fusion the purest quicksilver and well stir, when you have added enough it will remain a stiff paste, if too soft, add more tin, if not sufficient add more quicksilver. Grind this composition on a slab or in a mortar, with a little size, cut your groves in your pistols or wood of any kind, and fill them as with a piece of putty and let it remain some hours when you may polish it off with the palm of your hand and it will appear as if inlaid with silver.

### Another Method.

Instead of tin you may make a paste of silver leaf and quicksilver and proceed as in the above.

### For Colored Inlaying.

You may for variation in your work rub in different colored sealingwax, and heat the surface, by holding it to a gentle heat it will give it a glossy surface.

### To Clean and Tighten Cane Bottom Chairs.

First wash the bottom with warm water and soap, Then turn up the chair and sponge the under side with hot water and let it dry in the air. The cane will tighten as it dries.

### To Remove Stains from Carpets.

Mix spirits salts with cold water pretty strong, rub the stains and as soon as removed, sponge with more water to kill the spirits of salts.

### To Break Glass to any Shape.

First make a notch with a file then heat a piece of iron or stem of a clay tobacco pipe, and while the pipe is hot commence at the notch and draw it along the surface in any direction you wish.

### To Cut off Necks of Bottles Evenly.

First wrap worsted yarn (that has been previously soaked in turpentine), around the part you wish to cut off, set fire to the yarn and when hot a slight tap will cause the separation of the bottle.

### To Make Glass Stand Boiling Water.

Put glass into cold water and boil it and leave the glass in the water till it gets cold and after that the glass will stand hot water without breaking.

### To Silver Looking Glasses.

First spread a sheet of tinfoil on a smooth table and rub mercury over it with a camel-hair brush till the two metals incorporate, then lay a sheet of well cleaned glass upon



it with a weight and in a few hours the foil will adhere to the glass. Two ounces of mercury will be sufficient to cover three feet square of glass.

#### Buler's Patent Paint.

One pound of shellac, three pounds rosin, one pound sal soda boiled in five gall. rain-water and if the shellac does not dissolve, add more soda.

#### To Mix Shellac with Oil.

All alkalies will mix shellac with oil.

#### To Wash Brass or Copper Figures with Silver.

Take one ounce of aquafortis and dissolve in it, over a moderate fire, one drachm of good silver, cut very fine; the silver being wholly dissolved, take it off the fire and put as much white tarter as will absorb all the liquid, the residue is a paste with which you can rub over any brass or copper and which will give it the color of silver.

#### To Imitate Tortoise Shell on Copper.

Rub copper laminas over with oil of nuts, then dry them over a slow fire, supported by their extremities upon small bars of iron.

#### To Stain Horn to Imitate Tortoise Shell.

Mix an equal quantity of quicklime and

red lead with strong soap ley; lay it on the horn with a small brush in imitation of the mottle of tortoise shell; when dry repeat it two or three times.

#### To Soften Ivory.

Slice half pound mandrake, put into it a quart of the best vinegar, into which put the ivory for forty-eight hours in a warm place, and you can bend it to any shape you wish.

#### To Bleach Ivory.

Take a double handfull of lime and slack it by sprinkling it with water, then add three pints of water, stir well and let it settle, then pour off the water into a pan for use; steep the ivory for twenty-four hours, after which boil the ivory in strong alum water one hour and dry it in the air.

#### To Stain Ivory or Bone Red.

Boil small pieces of scarlet cloth in water, and add by degrees a little pear ash, till the color is extracted, a little roach alum now added will clear the color, then strain it through a linen cloth. Now steep the ivory or bone in aquafortis (nitric acid), diluted in twice its quantity of water, then take it out and put it into your scarlet dye till the color is to your mind. Be careful not to have the aquafortis too strong, or let the

ivory stay in too long. Try it first on a bit of ivory, and if you observe the acid has just caused a trifling roughness on the surface, take it out immediately and put it into the red dye, which must be warm but not too hot. Very little practice will teach you. Cover the parts you wish to remain unstained with white wax that is melted in a tablespoon or some small vessel; the dye will not penetrate through the wax. Do not make the dye hot enough to melt the wax.

#### To Stain Ivory or Bone Black.

Add to any quantity of nitrate of silver, (lunar costic), three times its bulk of water and steep the ivory or bone in it; take it out in about an hour and expose it to sun shine or dry and it will be a perfect black.

#### To Stain Ivory or Bone Green.

Steep your work in a solution of verdigris and salamoniac in weak aquafortis, in the the proportions of two parts of the former to one of the latter, being careful to use the precautions in staining red.

#### To Stain Ivory or Bone Blue.

First stain the work green according to the previous process, then dip it into a strong solution of pearlash and water.

### To Stain Ivory or Bone Yellow.

Put the ivory into a strong solution of alum water and keep the whole nearly boiling some time, then take it out and immerse it into a hot mixture of turmeric and water, either with or without the addition of french berries, let it simmer for about half an hour and the ivory will be a beautiful yellow. *Ivory or bone should dry very gradual or it will split or crack.*

### To Clean Marble, Porphyra or Scagliola.

Mix the strongest soap ley and quick lime to the consistency of milk, spread it on the marble and let it stay twenty-four hours; then clean it off and wash with soap and water, and it will appear as new. You can polish it if you wish with fine putty powder and olive oil, but if the marble is very rough it must undergo the process as given in polishing marble.

### To Polish Horn.

To polish horn is the same process as to polish tortoise shell.

### To Cast Horn to any Shape.

To one pound of wood ashes, two pounds of quick lime put into sufficient water to slack the lime, then boil till reduced to one-third. When this will take off the plume

of a feather it has boiled enough. Filter it off and into this liquor put shavings of horn and let them soak three days. Now rub your hands with sweet oil, and work the horn into a mass and mould it into the shape you want it.

#### To Imitate Mother of Pearls.

Reduce sea shells into a powder and make them into a paste with rice flour.

#### Chinese Method for Mother of Pearls

Is made from rice glue, which is nothing more than rice ground fine to a palpable powder and mixed with cold water, then gently boiled; a paste is thus produced which may be formed into moulds or figures.

#### To Polish Tortoise Shell.

Scrape the work perfectly smooth and level, rub it with fine sandpaper or dutch rushes; repeat the rubbing with a bit of felt dipped in very finely ground charcoal and water, and lastly with rotten stone or putty powder and finish with a soft wash leather made damp with a little sweet oil.

#### Superior Glass Paper.

Any quantity of broken window glass (that with greenish edge is best), pound it in an iron mortar, sift it to different degrees of

fineness through sieves of different sized openings; take any good, tough paper (fine cartridge is best), level the knots on both sides with a piece of pomicestone, tack it by each corner to a smooth board, and with good, clean glue, diluted with about one-third more water than is used generally for wood work, go quickly over the paper, spreading it evenly with a brush; then, having your sieve ready, sift the glass over it lightly so as to cover every part, let it remain until the glue sets, skake off the surplus glass, and hang in a shady place to dry. It will be ready for use in two or three days. This paper is far superior to any you buy, as they mix sand colored to deceive the purchaser.

#### To Make Anti-Attrition.

Take one part plumbago or black lead, ground fine, and four parts hog's lard, or grease, mixed well together. It prevents the effects of friction much better than oil or other grease, and is very useful to turners, as it will be found to make the lathe work much easier, as well as being a great saving in oil, which, with constant use, grows stiff and sensibly impedes the motion. This preparation once applied will last a long time without requiring renewal.

#### Polish for Turners' Work.

Dissolve an ounce of sandrack in half a

pint of alcohol, mixed alone; beeswax one ounce, and dissolve it in good spirits of turpentine sufficient to make it into a paste. Add the former mixture to it by degrees; then with a woolen rag apply it to the wood work while in motion in the lathe, and with a soft linen rag polish it, and it will appear as if highly varnished. Of course the wood must be smooth first.

#### To Make Old Silverware Like New in Appearance.

Lay the silver piece by piece upon a clear charcoal fire, and when they are just red take them off and boil them in tartar and water, and the silver will have the same appearance and beauty as when first new.

#### To Make Green Wax.

One ounce of beeswax, melt it and add half an ounce of verditer; let the pipkin be large enough, for the wax will immediately boil up; stir it well and add one-eighth of an ounce of rosin, and it will be sufficiently hard for use.

#### To Make Black Wax.

One ounce of beeswax and half an ounce of burgundy pitch, melt them together and add one and a half ounces of ivory black, ground very fine and dry.

### To Make Parchment Transparent.

Soak a thin skin of parchment in a strong ley of wood ashes; after wringing it out till you find it transparent, then strain it out to dry. This will be much improved if, after it is dry, you give it a coat, on both sides, of clear mastic varnish, diluted with spirits of turpentine.

### To Darken Red Sanders Stain.

A little nitric acid will darken it or muriatic acid will make it still darker; not too much till you see the effect.

### To Test Good Alcohol.

The most simple method is by immersing the finger in it; if it burns quickly out without harming the finger, it is good; but if it leaves a dampness and is long burning, it is not good. It may also be compared with other spirits by weight in equal quantities—the lightest is the best.

### To Test Good Turpentine.

This also can be told by weight, and the most inflammable is the best. One most in the habit of using it can tell by the smell. A good turpentine has a pungent smell, while bad has a disagreeable and not as powerful an one.



## To Make Composition Ornaments for Picture Frames.

Mix as much whiting as will be required for present use with thin glue to the consistency of putty, having a mold ready, rub the mold well over with sweet oil, and press the composition into it; take it out, and you have a good impression. Set this to dry, or you can use it at once and bend it to any shape. Apply it to your work with thin glue. If you have no mold you can make one of the composition from any leaf or pattern you may wish to copy by taking the impression and let it harden.

### Imitation of Seed Pearls.

Cut silver lace into pieces of various lengths, put them into a small crucible with well powdered charcoal, one stratum above another, then give it a heat sufficient to melt the silver, and it will be found on cooling to fuse into round grains resembling pearls.

### Figures to Imitate Ivory.

Make isinglass and brandy, with powdered egg shells, into a paste, cast it in a mold while warm, first oiling the mold with sweet oil; if you grind the shells thoroughly, it will make beautiful ornaments.

### A Good Cement to Mold.

Mix rice flour with water and gently simmer it over the fire; then mix it to the thickness of clay, and you may cast in molds to any shape and it will take a beautiful polish.

### To Make a Common Plaster Figure Resemble Wax.

Set the figure in a warm place and have it thoroughly dry; then have a vessel large enough to contain it; have enough of the best and cleanest linseed oil in the vessel to cover the figure; have it just warm, and let the figure stay in the oil say twelve to fourteen hours; take it out and let it drain; keep it entirely free from dust until very dry, and it will resemble wax and bear washing.

For a Black Japan.—You may want to fill up spots that have been chipped off of Japaned work, the following will do on most things, at least it is the best for simplicity to the unskilled, you can also use it to Japan the work entire. Mix a little gold size and lampblack and apply with a brush. It will bear a good glass even without varnishing over.

To Silver Ivory.—Pound a small piece of nitric of silver (lunar costic) in a mortar,

add soft water to it and mix them well together; put this in a vial for use, when you wish to silver any ivory article, immerse it in the solution and let it remain till it turns to a deep yellow, then put it in clean water and expose it to the rays of the sun, or if you wish to make any rims or figures on the ivory, dip a camel hair pencil in the solution and draw your lines and after it has turned a deep yellow, wash it well with water and place it in the sunshine, occasionally wetting it with pure water in a short time it will turn black and then if well rubbed it will change to a brilliant silver.

To Preserve Wood against Injury from Fire.—Put into a pot an equal quantity of finely pulverized iron filings, brick dust and ashes, pour over them a glue water or size; set the whole near the fire and when warm stir them well together, with this liquid wash over all the wood work that may be in danger and when dry give it a second coat when it will be proof against damage by fire.

To Cast Ornaments or Mouldings to Resemble Wood.—Mix a very clean cement of five parts of flanders glue and one part of isinglass by dissolving the two separately in a large quantity of water, after separat-

ing those parts which could not be dissolved by straining them through a fine linen cloth, mix them together. The glue thus prepared must be heated so that the fingers can scarcely be borne in it, by this the glue acquires more consistancy; mix raspings of wood or saw dust passed through a fine sieve with the glue, forming it into a paste, now rub the plaster or sulpher moulds with linseed or nut oil, put in the paste and press the parts by hand thoroughly, cover it with an oiled board and place a weight upon it, when thoroughly dry remove it and smooth all unequalities. These castings can be pasted to any place with glue.

Splendid Jet Ink Powders.—Two ounces of extract logwood, twenty-four grains by-cromate potassa, twelve grains prussiate pottassium. Each of these must be separately ground very fine in a mortar and then ground together. Keep this powder in a bottle for use; put a very little in a tea cup and pour on it thorough boiling water and stir with a bit of stich and you have a first-class inh. This quantity is enough to mix over a gallon of inh. These powders are very useful especially to those living in the country. The ink must not be made or put into a tin or iron vessell.

**Red Stain for Bedsteads or Chairs.**—Archil as sold at the shops, will produce a very good stain of itself, when used cold; but if, after one or two coats being applied and suffered to get almost dry, it is brushed over with a hot solution of pearl ash in water, it will improve the color.

**Fine Crimson.**—Boil one pound of good Brazil dust in three quarts of water for an hour, strain it and add half an ounce of cochineal; boil it again gently for half an hour, and it is ready for use. If you wish it more of a scarlet tint, boil half an ounce of saffron in a quart of water for an hour and pass over the work previous to the red stain.

**Purple.**—To a pound of good chip log-wood put three quarts of water, boil for an hour, then add four ounces of pearl ash and two ounces of indigo pounded.

**Fine Black.**—In general, when black is required in musical instruments, it is produced by japanning; the work being prepared with size and lampblack, apply the black japan (as sold at varnish shops), after which varnish. But as black stain is sometimes required for finger boards, bridges and flutes, you may then proceed as directed in staining; the wood ought to be either pear,

apple, or boxwood, the latter is preferable; and if it is rubbed over when dry with a flannel dipped in hot oil, it will give it a gloss equal to ebony.

**Fine Blue.**—Into a pound of oil of vitriol (sulphuric acid), in a clean glass phial, put four ounces of indigo, and proceed as above directed in dyeing purple.

**Fine Green.**—To three pints of good strong vinegar add four ounces of the best verdigris pounded fine, half an ounce of sap green and half an ounce of indigo; diluted in vinegar or verjuice improves the color.

**Bright Yellow.**—You need not stain wood yellow, as a small piece of aloes put into the varnish produces the desired effect.

**To Make Shell Gold.**—Take any quantity of leaf gold, and grind it with a small portion of honey to a fine powder; add a little gum arabic and sugar candy, with a little water, and mix it thoroughly together; put it in a shell to dry until you want it.

**Silver Size.**—Take tobacco pipe clay, grind it fine with a little black lead and genoa soap, and add parchment size as directed for gold size; any soap will probably do, if you can not get genoa soap, but genoa soap is best.

To Clean Mirrors, or Looking Glasses, &c  
 —Take a sponge, wash it well in clean water, and squeeze it as dry as possible; dip it into some alcohol and rub over the glass; then have some powdered blue tied up in a rag, dust it over the glass and rub it lightly and quickly with a soft cloth; afterwards finish with a very soft cloth.

A Green Paint for Garden Stands, Venetian Blinds, Trellises, &c.—Take mineral green and white lead ground in turpentine; mix the amount you wish with a small quantity of turpentine varnish. This serves for the first coat. For the second, put as much varnish in your mixture as will produce a good gloss. If you desire a brighter green, add a small quantity of Prussian blue, which will much improve the color.

Furniture Paste.—Scrape two ounces of beeswax into a pot or basin; then add as much spirits of turpentine as will moisten it through. At the same time powder an eighth part of an ounce of rosin, and add to it, when dissolved to the consistency of paste, as much Indian red as will bring it to a deep mahogany color; and it is ready for use.

Furniture Oil.—Put linseed oil into a glazed pipkin, with enough alkanit root to

cover it; boil it until it becomes of a strong red color; let it cool and it will be fit for use.

**Luminous Liquor.**—Put a little phosphorous with essence of cloves into a clear bottle; keep it closely corked, and every time it is opened in the dark it will appear luminous.

**A Liquid that Shines in the Dark.**—Take a bit of phosphorous the size of a pea; break it in minute parts, put into an earthen vessel half full of water and boil it; get a long, clear, narrow bottle with a close fitting glass stopper; immerse the bottle, mouth down, into boiling water, and put in the mixture in a boiling state; cover the bottle with good sealing wax, and it will shine for months, when shaken, and in dry, warm weather beautiful flames can be seen rise.

**To Cause Iron to Run in Drops.**—Heat a piece of iron thoroughly red hot and apply it to a roll of sulphur and the iron will run into drops. This experiment should be performed over a basin of water.

**To Cause a Stone to be in a Perpetual Motion.**—Put some fine iron filings into a bottle with aquafortis; let them remain until the aquafortis carries off all the iron requi-



site, which it will do in seven or eight hours, then pour off the aquafortis into a phial an inch in diameter with a large mouth and put in a very hard stone, stop up the bottle and the stone will continue in perpetual motion.

**Lead Tree.**—A lead tree, if rightly made, is a most beautiful parlor ornament. It is very easy to manufacture it. Many persons pretend to produce something they call a lead tree, but there is no resemblance. First get a large, wide glass candy jar with a tin cover, the wider the better; clean it thoroughly; now get a strip of zinc an inch and a half wide, cut one end four cuts about one and a half inches straight up the zinc, bend the strips you cut two each way, so as to form feet to stand on the bottom of the jar; now cut the other end of the zinc in very small strips and bend them in different forms, as near the shape of branches of a tree as you can, but do not have them touching each other; now place this tree like piece of zinc into the jar, leaving one of the branches straight up, to which tie a strong thread; after the zinc is put in shape in the jar so that it will not touch the sides when standing upright, put two ounces of sugar of lead into just the quantity of very clear soft water that will fill the jar; pour this into the jar where the

zinc is, and, having a minute hole in the center of the tin cover, pass the thread through, put the cover on and draw the thread just tight enough to hold the tree up right and fasten it to a bit of stick (a bit of match); remember not to let the zinc touch the side of the jar, nor have it tall enough to touch the top, nor let the branches touch each other, or the sugar of lead will get into one mass instead of forming branches. Curl the branches' points down, so the lead can hang gracefully similar to a willow tree; by putting clippings of zinc in the bottom of the jar it will resemble stones. Let stand until it clears. If this is put where it is not moved it will remain months and is very beautiful. A little tartaric acid will clarify the water after it has become dirty with standing long.

**Ornamental Designs in Glass.**—Melt white wax or beeswax in a pipkin, then spread it over the glass, and the parts you wish to have your name or any design, scratch off the wax in those parts and go over it with florid acid, and when the wax is cleaned off your design will be perfect on the glass, provided the wax has been properly removed where the design was intended to have been.

**Violet Ink.**—To one drachm of the prop-

er aniline color add one and a half ounces of alcohol in a glass ; let stand for three hours ; then add thirteen ounces of distilled water. and subject the whole to a gentle heat until the alcohol evaporates—that is, until the odor of the alcohol is imperceptible ; then add four drachms of gum arabic dissolved in three ounces of water ; mix and strain.

White Ink.—Carefully wash some egg shells and remove the inner lining ; then grind them on a hard stone or in a mortar ; now put them into a small vessel with pure water, and when settled draw the water off and dry the powder in the sun ; preserve this powder in a bottle. When you want to use it put a small quantity of gum ammoniac into distilled water and let it dissolve through the night. Next morning the solution will appear white ; and if you strain through a clean linen rag and add to it the powdered egg shells, you will obtain a very white ink. This is used for writing on colored paper, mostly for show cards.

Erasive Soap, to Extract Grease, Tar, Paint, or Varnish from Clothing, &c.—Common Soap, one pound ; alcohol, one pint ; chip the soap fine and put in a clean iron vessel, pour the alcohol over it and

heat gradually until it comes to a boil; pour into molds and perfume to suit your fancy.

**GOOD BLACKING.**—Ivory black, and common molasses, of each one pound; spermaceti oil, four ounces; white wine vinegar two quarts; and thoroughly mix.

**For the Hair.**—Tincture of cantharides, one ounce; water ammonia, one ounce; olive oil, one ounce; bay rum, five ounces; well brush the hair before using and it is the best hair dressing the world ever produced; it softens the hair, stops its coming out, and causes new hair to grow that has been lost through disease. Try it by all means. It does not grease the hat or collar of the coat. Let aged persons use this and the hair will soon get a gloss. Use this and you will receive full value for all you have paid.

**To Beautify Brass Ornaments.**—The brilliancy of gold can be imparted to brass ornaments by just washing them with a strong ley made of rock alum, in the proportion of one ounce of alum to a pint of water; when dry rub with leather and fine Tripoli.

**To TEST LINSEED OIL.**—Cotton seed and pea nut oil is often mixed with linseed oil

and palmed off on the painter for pure linseed oil, and is the cause of so much scaling of varnishes and paints. You can test it in the following manner: To ascertain whether there is pea nut oil in the mixture, rub some of the oil in the palm of the hand until it becomes warm, and if pea nut oil is present it will smell of parched pea nuts; and if cotton seed oil is present, when it is mixed with any dry colors it will get stiff or thicken and be spongy, and when used will not cover well. Many have the impression that this is caused by manufacturers of white lead mixing whiting with their leads, but it is not so, for this reason: if whiting was mixed in making white lead, the whiting would run from the oil and settle at the bottom; while the barytes with which this lead is made will remain mixed with the oil. If concentrated ley is mixed with the oil you may purchase, it can be detected best on work that has been sanded, as it will then lather up. Concentrated oil is frequently mixed with re-boiled oil.

TO MAKE COLOGNE WATER.—Alcohol, one pint; oil of lavender, three drachms; oil of rosemary, one drachm; essence of lemon, three drachms; oil of bergamot, three drachms; oil of cinnamon, three drops; mixed well together.

TO CLEAR MUDDY WATER.—One-half ounce of the permanganate of potassa to thirty gallons of water, and it will clarify instantly.

FOR THE TEETH.—Three ounces of ammonia ball, two and a half ounces of oreis root and two and a half ounces of prepared chalk, mixed well to a paste with water; put the above into pill boxes, or, better, into an earthen box; damp the brush, rub it on the paste and clean the teeth. This will not hurt the enamel of the teeth, but will give them a beautiful gloss, and there is nothing injurious in it. This you can not be sure of in purchased tooth pastes or powders. This can be used as a powder by mixing no water with it; only grind it well together. You can scent it if you wish.

TO TAKE STAINS OF WALNUTS FROM THE FINGERS.—Rub the fingers with very strong tea; then wash them well in water.

TO DESTROY ROACHES, ANTS, INSECTS, OR VERMIN.—The smell or touch of borax will kill roaches instantly, and by sprinkling borax around, crickets, bugs, ants and other pests of this kind will all disappear. Those who travel may keep powdered borax in a small pepper box, and if the bed is of a sus-

precious nature, dust the borax powder over the bed, and you will not be disturbed.

#### VERY CHEAP AND GOOD FIRE KINDLERS.

—First steep corn cobs in hot water with two per cent. of saltpetre; take them out and dry them at a high temperature over a fire; now dissolve rosin in benzine, made to the consistency of thin varnish; let the corn cobs lie in this, say ten minutes, let them dry; now put one of these cobs into the stove or grate, build the coal over it and light it. You will be more than paid for the trouble, and there is not the slightest danger. A trial will teach you how much rosin. A half gallon will make a great quantity, and no wood is needed.

All varnishes must be strained after they are made.

Nickle Plating.—One pound nitric acid, two dollars worth of good silver, three nickels (five cents pieces, and four ounces of mercury; put the silver, nickels and mercury into the acid, let it stand uncorked till dissolved, then add one and one half quarts rain water and it is ready for use. Clean thoroughly the parts to be plated, and with a piece of cloth made into a roll, rub well the parts, after turning a small portion of the liquid from the bottle on to the cloth.

To Make Common Ink Indellible.—Into a four ounce bottle put in lunar costic the size of a common pea.

Copying Ink of Common Ink.—Put in a little of the best white sugar, or a very small portion of glycerine will do it. It keeps it from drying too soon.

Stains of Walnuts from the Fingers.—Strong tea, then wash them in water.

Cement for Leather—(patent applied for.—Gutta percha dissolved to the thickness of molasses in bi-sulphuret of carbon. Mode of preparation: Cut the guttapercha into small chips, put them in a bottle, then add the bi-sulphuret of carbor. Keep the bottle well corked, shake it occassionally and in a few minutes it will be fit for use. Mode of use: After having the blacking properly cleaned off, and the patch trimed to a complete edge, put a little cement on both pieces and put them together immediately, before allowing time to harden, finish off with a hot burnisher and in five minutes it will be ready for use. If you bevel the edges of two pieces of leather and cement them it is impossible to pull them apart.

Liquid Blueing for Clothes.—One ounce of best Prussian blue, pulverized; one-



half ounce of oxalic acid; one quart of soft water. Mix well. The acid dissolves the blue and holds it evenly in the water, so that specking will never take place. One or two table spoonfulls of it is sufficient for a tub of water, according to the size of the tub.

To Crystalize Tin.—Clean the tin free from grease with warm water and soap, then rinse well and dry it; now heat it so you can just bear it in your hand, then expose it to the vapor of any acid that will act upon tin, or pour on, or brush the tin over with a brush or sponge, the granular crystallization varying accordingly to the strength of the wash and the heat of your plate. Make enough for your job, as no two makings will be alike. You can use—Wash the first, one part by measure sulphuric acid, diluted with five parts water: Wash the second with nitric acid and water of equal quantities. Keep the two mixtures separate. Then take of the first mixture ten parts and one part of the second mixture. Repeat the operation till the tin gets cold, or till you may be satisfied, then varnish with transparent varnish.

Another for Tin.—The fancy may be employed in using your acids in various degrees of dilution, when, by the cloudy re-

flections more or less resemble mother of pearl or assume the deep shades of rude leaves, of stars and other figures, or simple granulations. This is the process of Mr. Baget, and these his various mixtures. 1. Dissolve four ounces of murate of soda in eight ounces of water and add thereto two ounces of nitric acid. 2. To eight ounces of water put two ounces of nitric acid and three of muriatic acid. 3. To eight ounces of muriatic acid add one ounce of sulphuric acid. One of the above mixtures at your pleasure is to be poured upon the heated tin while it rests upon a vessel of stoneware. The mixture is to be thrown upon the tin by instalments, as it were; the tin is then to be thrown into a slightly acidulated water and then washed in clean water.

Gold Varnish.—To be laid on the tin which has been ornamented by the above process. Two ounces shellac; one ounce of annetta; one ounce of turmeric; thirty grains of dragon's blood (powdered), dissolve these in twenty ounces of alcohol by gentle heat.

### To Cabinet Makers.

After you have stained the new wood, you can use any kind of varnish you may choose in preference to mine.

**Nota Bene.**

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